

INTEGRATED MICROCHIP DESIGN

ABSTRACT

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Structures and methods that facilitate integration and/or isolation of various functions in a microchip system are disclosed. In one embodiment, the integration of the functions is by a multi-chip, sliding linear valve approach. The chips are in continued physical contact. In a second embodiment, the chips are separated and rejoined when they are moved to the preferred position. Surface coating of the joining edges helps prevent leakage and keeps liquid in the capillary channels for both embodiments. Another embodiment relates to miniature valves. Several designs were disclosed, including the linear, edge-contact sliding valve approach. Method to fabricate very small, high aspect ratio holes in glass was also disclosed, which facilitates the above embodiments.